Radical Research Honesty in a Post-Truth Society

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Abstract. It seems that in much current research, big truths have to be protected by a bodyguard of little white lies, and a phalanx of unreported inconvenient truths. What would happen if we told the truth about how we really do research? Let's see...

Keywords: full disclosure; inconvenient truths; research methods; ethics

1 Introduction: Using all the latest buzzwords

Despite growing interest in multidisciplinary research at the intersection of Big Data, augmented reality, drones, autonomous vehicles, postgenomic robotics, and genetically modified ontologies, surprisingly little work has been done at the nexus of them all [14]. In this paper we explore this understudied area. We aim to bring a much-needed reflexivity to the trope of the performance of research. We also say "Foucault" [9].

This research is motivated by future funding possibilities for career preservation [3, 16]. We stand ready to jump on the latest bandwagon—and also pivot before it fails to deliver. This year what we do is all about Big Data and Data Science. Next year if there is a $500 million basket weaving initiative we will discover to our great surprise that this same thing we do is core to 3D fiber construction. We have strong principles about the importance of conceptual flexibility. "Intellectual whore" is an ugly term and we prefer to classify ourselves as intellectual courtesans. Same principle, different costing structure. Although the facilities and administrative overhead rates we have to charge and pass on are somewhat high.

2 Literature Review: Recycled from the last one

We copied the literature review from someone else who clearly copied it from other people. We change a few words so it does not look like plagiarism. You can tell we haven't really read the papers because we say what other people say that they say, not what they actually say. We also copy their errors in the citation details [8].

Given the rapid rate of growth in the literature, and stronger incentives to write than to read, we have to be selective. We therefore pick only the best, most insightful researchers in the field. It is pure coincidence that these are people who might review this paper [7, 12], or advance our careers. Citing extremely important people also allows us to obtain reflected prestige from their reputation. We also cite people in scenic locations we would like to visit on our upcoming sabbatical. Finally, we cite those who

show the great insight and acuity to cut through the information overload to identify the truly excellent papers in the field and so cite us. We owe you.

We include a few self-citations [20]. Not too many, because that would look greedy and self-serving [22]. But there are a few papers which are at our personal h-index tipping points. We have a little list. You do too, don't you? We thought about replacing the literature review with a 'related work' section tacked on the end of the paper after we've spent all our time talking about us. Then we can note that a bunch of other people have done similar stuff but it clearly influenced us not one whit and we are only putting it here because someone says that reviewers like it. But then we realized that although we may be a bit cynical we are not incompetent. We do actually believe in the idea of building on the work of others [1].

3   Method: Admitting to floundering, mess and iterations

The conference deadline is imminent, so it's time to throw something together [16]. A detailed investigation of the 'work-in-progress' folder was undertaken. Application of least publishable unit analysis narrowed down the files to be subjected to slapdash reading—a variant of both close reading and distant reading, that can be undertaken without needing reliable natural language understanding by a program. Or indeed a human.

We considered filling out an Institutional Review Board (IRB) application to do Human Subjects Research but concluded that actually telling the full truth was incompatible with filling out the IRB form. We'd like to ask the IRB what they think about that, but in order to do so we would have to fill out an IRB form. Fortunately, co-authors are not considered human subjects, so they were interviewed using an open-ended questioning technique to see if we could cobble something together and call it 'emergent'.

A variant of grounded theory was used: one that involves the least amount of actual work and pays the least attention to what grounded theory actually is. But if you say you used 'grounded theory' that sounds clever: certainly much better than 'well I looked around until I saw something interesting'. We also did a lot of thinking. But that doesn't count. You can't waste grant money on thinking. You have to rush around doing stuff. It's a Protestant Work Ethic [21] thing. You should have done all the necessary thinking before you got the grant. The best researchers don't need to do any thinking at all, because they also know what the result is before they got the grant. We really got cracking when we wrote stuff on the whiteboard and argued about it. That was our method—but it seems that's not what a socially-acceptable method is. You don't actually say what you really did in a methods section. You miss the boring stuff out.

4   Results: Not as tidy as we would like. Please don't notice

We have some data that's been lying around in a file drawer [18] for ages because it's not very good or interesting and we haven't got around to trying to pretend it is in some way meaningful. Frankly, it's entirely tangential to what this paper is about, but if we

keep the variables obscure enough and rely on the reviewers to be in a mad rush to get their reviewing done on the day of the deadline we should be able to get away with it. We will tell them what it says and trust they won't have time to check. We also re-used Cham's extraordinary dataset [4] of doctoral student neuroses cunningly collected by purporting to ask for ideas for a 'comic'. Annoying confounds and troubling sub-findings have been studiously not mentioned. We sincerely hope you won't notice. Please do not look at column 4 in Table 2. To help you ignore it, we have deleted the entire Table from the final version of the paper.

Here's a p. It's really small and we worked very hard to find it. We looked at pretty much every variable we could think of. Fortunately, unsupervised machine learning has allowed us to industrialize p-hacking. We are however absolutely sure we understand all the statistical nuances and implications of whatever methods we are actually using. We treat the methods as black boxes. Squirt numbers in, pull significance out. If not, try again. We vaguely remember being in a lecture about these methods many years ago. But we were young. And probably had a hangover. In accordance with the norms in our field we haven't checked whether our data fulfils the characteristics underlying the assumptions for the statistical method. The reviewers can't check because we haven't provided the data. The probability of our statistically significant finding happening due to chance is fractionally less than 5%. Well a 5% chance event will never happen will it? That's why we researchers don't buy house insurance. There's no way 5% of my papers report simple randomness. Math is hard [15]. Let's go grant-shopping.

Then after a lot of noodling in the data we actually saw something interesting and useful. So we rewrote the whole paper, pretending that it is what we were intending to look for in the first place. We've deleted all the stuff about floundering around and all the dead ends we took. Now it is a clear logical progression from what we knew we'd find to actually finding it. We call that technique Tardis-Driven Research (TDR). It involves travelling back in time after you have a result to tell your earlier self what to write as your research question and what to pretend your method was; so you can get to the inevitable answer in a nice, clear, short, easy-to-tell path. TDR has the side effect that the research is a much bigger mess on the inside than it looks on the outside. TDR is just subtly different enough from HARKing [13] to merit a new paper.

Our results are stored in a database. Well actually it's a spreadsheet but that doesn't sound clever enough. So we are calling our spreadsheet our 'results database'. Last time it was a PDF so we are making great progress in our data curation practices. Full details of our dataset are available upon request. As per our data management policy we will then resolutely refuse to share it for reasons of personal confidentiality. Because we are Good People. We aim to be compliant with worst practices in the field.

5   Limitations: Get out of jail free card and prebuttal

We are so unworthy. Our limitations section lists way more flaws than other people's limitations sections, so we win. This work is complete rubbish. Ha! We said it first! Now you aren't allowed to reject this paper for being rubbish because we beat you to it. That is what the limitations section is for, right?

6   Conclusion: Give us money

Here is the introduction again. It's so good, we say it twice. We have uncovered the concept of Tardis-Driven Research (TDR). However, it seems that others have travelled back in time and copied us throughout science [2]. Our major finding is that more funded work needs to be done. Look I have my serious face on. There are important ethical implications of this work that must be urgently addressed. That is why any ethical funding body MUST fund us—or they would be an unethical funding body. Shame and guilt are what furthers scientific progress. So does greed and political fashion. This work will also address border security, cybercrime, the balance of payments and worker productivity. Maybe it will cure cancer. Who knows? But if it isn't funded we all know who to blame. And we have shown what happens if you really tell the truth.

7   Acknowledgements

8   References: Annotated Bibliographic Citational Dubiousness

The Blue Sky submission details say "Length: Up to 4 pages (excluding references)". Well that's a nice loophole to exploit—strictly in the interests of better whole truth-telling of course. Each reference is annotated with our real reason for including it.

1. Antonakis, J. (2017). On doing better science: From thrill of discovery to policy implications. The Leadership Quarterly, 28(1), 5-21. [Stressors increase the susceptibility of researchers to diseases such as "significosis" and "neophilia".]
2. Baker, M. (2016). 1,500 scientists lift the lid on reproducibility. Nature News, 533(7604), 452. [Surveys indicate the presence of TDR-related activities across many disciplines.]
3. Burrows, R. (2012). Living with the h-index? Metric assemblages in the contemporary academy. The Sociological Review, 60(2), 355-372. [Metrics pressure and stress people and seduce them into being unethical. We have accurately recorded this research in our workload model under designated 'research time' and testify that we did not steal from our teaching, administration and family responsibility time to write this paper.]

4. Cham, J. (n.d.) PHD Comics. Retrieved from http://phdcomics.com 24 Sept 2018. [Cham collects examples of these issues from real research students worldwide and then turns them into cartoons whose popularity is at least in part due to recognition of the topic. Many a true word is spoken in jest.]

5. Charlton, B. G. (2009). Are you an honest scientist? Truthfulness in science should be an iron law, not a vague aspiration. Medical Hypotheses, 73(5), 633. [Mad person who thinks we should always tell the truth in science: "else the activity simply stops being science and becomes something else: Zombie science".]

6. Cronin, B. (1998) Metatheorizing citation. Scientometrics 43(1) 45-55. [Why people cite. And it says 'metatheorizing' which sounds scholarly. Meta is Better. We like Blaise. Citing him may make some of his eminence rub off. Wouldn't it be interesting if all citations came with these kinds of annotations? Could we cope with being this honest about our citations?]

7. Crowston, K. (2000). Process as theory in information systems research. In Organizational and social perspectives on information technology (pp. 149-164). Springer, Boston, MA. [Sucking up to the Blue Sky Co-Chair.]

8. Dubin, D. (2004). The Most Influential Paper Gerard Salton Never Wrote. Library Trends, 52(4), 748-764. [People are bad at citing and copy other people's bad citations. Who knew?]

9. Foucault, M. (1983). Discourse and Truth: the Problematization of Parrhesia. Six lectures given by Michel Foucault at the University of California at Berkeley. Later Published under the title Fearless Speech. Los Angeles: Semiotext(e). [Citing an enormously cited French Intellectual to make us look like we are clever and obtain reflected prestige. We have of course not read it. But the title looks relevant. Looking at Google Scholar results, no-one seems to know the proper way to cite this, but who cares?]

10. Gelman, A. (2016). The problems with p-values are not just with p-values. The American Statistician, 70(2). www.stat.columbia.edu/~gelman/research/published/asa_pvalues.pdf [A statistician reminds us of the subtleties we really should take into account—not just treat statistical methods as magic black boxes spitting out p values. Also shows a feature of TDR—it massively increases the researcher's degrees of freedom. Accurately citing this supplemental online discussion is difficult as the ASA provides no guidance. Consequently, no-one else seems to know how to cite it properly either.]

11. Grassano, N., Rotolo, D., Hutton, J., Lang, F., & Hopkins, M.M. (2017). Funding data from publication acknowledgments: Coverage, uses, and limitations. Journal of the Association for Information Science and Technology, 68(4), 999-1017. [Admittedly the fake grant in our Acknowledgements is not helping the situation.]

12. Hedstrom, M., & King, J.L. (2006). Epistemic infrastructure in the rise of the knowledge economy. In Advancing Knowledge and the Knowledge Economy (pp. 113-34). MIT Press. [Sucking up to the Blue Sky Co-Chair.]

13. Kerr, N. L. (1998). HARKing: Hypothesizing after the results are known. Personality and Social Psychology Review, 2(3), 196-217. [Annoyingly similar idea to Tardis-Driven Research. But we have a snappier name so use ours and cite us instead of Kerr. Or at least alongside Kerr. We don't care: so long as you cite us.]

14. McNoleg, O. (1996). The integration of GIS, remote sensing, expert systems and adaptive co-kriging for environmental habitat modeling of the highland haggis using object-oriented, fuzzy-logic and neural-network techniques. Computers & Geosciences, 22(5), 585-588. [Appendix 1 has an inspiring trendiness analysis.]

15. McShane, B.B., Gal, D., Gelman, A., Robert, C., & Tackett, J. L. (2017). Abandon Statistical Significance. arXiv preprint arXiv:1709.07588. [Statistics has numbers to show it is even harder than regular math.]

16. Moore, S., Neylon, C., Eve, M. P., O'Donnell, D. P., & Pattinson, D. (2017). "Excellence R Us": university research and the fetishisation of excellence. Palgrave Communications, 3, 16105. ["the hyper-competition that arises from the performance of "excellence" is completely at odds with the qualities of good research"]

17. Muller, J.Z. (2018). The tyranny of metrics. Princeton University Press. [Unintended, but surely not unexpected, consequences when metrics are used in management, including in the management of science.]

18. Rosenthal, R. (1979). The file drawer problem and tolerance for null results. Psychological Bulletin, 86(3), 638-641. [Telling the whole truth can be hard to do—or hard even to be allowed to do if you have a null result.]

19. Simonsohn, U., Nelson, L.D., & Simmons, J.P. (2014). P-curve: a key to the file-drawer. Journal of Experimental Psychology: General, 143(2), 534. [p-hacking: we've lost our keys.]

20. Twidale, M. B., & Nichols, D. M. (2013). Agile methods for agile universities. In Re-imagining the Creative University for the 21st Century (pp. 27-48). Sense Publishers, Rotterdam. [Gratuitous self-citation for personal h-index growth at the h-inflection point, and university rankings advancement]

21. Weber, M. (2013). The Protestant ethic and the spirit of capitalism. Routledge.
    OK, but better and smarter looking is:
    Weber, M. (1904-1905). Die Protestantische Ethik und der Geist des Kapitalismus. Archiv für Sozialwissenschaft und Sozialpolitik (20(1), 1-54 ; 21(1), 1-110)
    [Ugh, this is a nightmare to cite well. No wonder so many people don't bother. Doesn't German look impressive? Just writing it makes my IQ seem to go up. Ethiks looks so much more exciting than Ethics. Like Praxis. If we are obscurer we must be righter.]

22. Weingart, P. (2005). Impact of bibliometrics upon the science system: Inadvertent consequences? Scientometrics, 62(1), 117-131. ["Bibliometric indicators have become such a powerful tool in the context of science policy making and budgetary decisions that their potentially misleading and even destructive use must be acknowledged. By virtue of their potency the application of these indicators warrants a professional code of ethics."]

9 Supplementary Materials

We are over the limit for the paper so the vitally important points are hidden in the supplementary materials. We are allowed to have supplementary materials, right? How else can we properly tell the truth?

Given the usual constraints like page limits, is it any wonder that researchers are tempted to fudge a bit, to be simpler so as to be shorter. If you have a research ethics choice between telling the whole truth and going over the page limit thereby risking the paper getting rejected, which do you choose? Of course, page constraints on grant proposals and papers are there for good reasons. But they do have consequences. Even at times ethical consequences.

9.1 Coda: Implications for designing a revolution

There is a serious point lurking in this article. Surely being a good researcher requires radical honesty, at least to oneself. Otherwise you get misled by what the world is telling you and how your analysis and interpretation may be flawed. It would be better if we are cynics, than so inept we can't even see what we are doing. If the latter, it causes one

to fear for the quality of our research. To what extent do we have a system that punishes people for being too honest and rewards those who dissemble or prevaricate or hide stuff? How much are we punishing human fallibility, rather than acknowledging it and building on it, fixing as we go? How much are we setting impossible standards of perfection where we inevitably fail and then are immensely tempted to pretend we have not failed? How much are we misleading junior researchers? What effect does it have when they see the disconnect between what they actually do and what we say that we do? Does it sow doubt amongst the less arrogant that they must be doing it wrong, that they are not proper researchers and that they do not belong in research? Are metrics perverting the ethical sense of researchers, funders, publishers, and administrators?

What does it say about the system we are complicit in that the idea of being a bit too truthful about our research processes is frequently considered problematic? That you write a draft grant proposal or IRB application, and a trusted colleague advises you: "Oh you shouldn't tell them that. That will raise all kinds of red flags. Whether it's the truth or not is irrelevant. Dissemble a bit. No that isn't lying. It can't be because it mustn't be. We all do it. And anyway you won't get the grant if you tell that particular truth." Are researchers' frustrations and dubious actions at least in part facilitated by a poorly designed scientific sociotechnical system? Can we improve, replace or tweak it? Dare we? Shall we?

9.2 Why iSchools can and should help fix the scientific sociotechnical system

Science is a sociotechnical system at the intersection of people, information and technology. We in iSchools bring a broad multidisciplinary perspective to understanding the ways that the design of the system incentivizes certain actions and subtly discourages others. There are issues of metadata, reproducibility, provenance, metrics, the publishing process, and citing behavior that are most naturally part of iSchools' purview. All these feed into hiring and promotion decisions, lab and departmental culture, and the implicit curriculum by which we teach the next generation of researchers what really matters and how it differs from what we say matters. Although a radical overhaul may be infeasible, we should consider suggesting improvements and providing informed weighing of the relative costs, benefits, intended and possible unintended consequences of changes we or others propose. Just as civil engineers are expected to comment on the desirability of a proposed modification to a rickety bridge, so should we with respect to the scientific sociotechnical system. Why not embrace sociotechnical engineering?